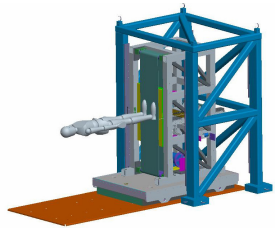
GRC Exercise Countermeasures Lab (ECL)

ISS Crewmember on TVIS treadmill

Test subject on Zero Gravity Locomotion Simulator



Model of test subject in the ECL

- **Capabilities: TVIS, CEVIS, IRED exercise modalities and crew SLDs may be evaluated for biomechanical loading in a ground-based simulator which simulates on-orbit exercise, locomotion in reduced g (Moon, Mars)**
- **Treadmill with integrated force plate and SLD assembly ride on frictionless air-bearing table, 1 DOF or 3 DOF motion possible**
- **Variably-compliant isolators simulate ISS exercise countermeasure device dynamics**
- **Customers: NASA-wide Human Health and Countermeasures researchers**
- **GRC POC: Gail P. Perusek**

Roles in Future NASA Missions

- Developed for advancing Human Health and Performance in space → exercise prescriptions for maintaining healthy bone and muscle mass during long-duration space missions
- Ground based testbed for studies involving human locomotion in reduced gravity environments (i.e., Moon, Mars)
- Developing and verification of design requirements for Subject Load Device, Exercise equipment and vehicle-interfaces

Accomplishments and Impacts

- New Facility Capability for GRC – planned to be on-line in Summer ’05